CLAIMS

1. A method to qualify a local loop (LP), which connects customer premises (CP) to a central office of a telecommunication network (CO), and which comprises at least three loop terminations (TERM 1, TERM 2, TERM
5   3), said method comprising the steps of carrying out at a first loop termination (TERM 1) out of said at least three loop terminations a first reflectometry measurement of said local loop while a second loop termination out of said at least three loop terminations, which is wired to said customer premises, is loaded with a first impedance (ZL = Z1), thereby
10   providing a first reflectogram, which is used for qualifying said local loop, **characterized in that** said method further comprises the steps of:
- carrying out at said first loop termination a second reflectometry measurement of said local loop while said second loop termination is loaded with a second impedance distinct from said first impedance (ZL =
15   Z2), thereby providing a second reflectogram,
- determining in the time domain a feature which distinguishes said first reflectogram from said second reflectogram,
- identifying from said feature said second loop termination out of said at least three loop terminations (CP = TERM 2).
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2. A method according to claim 1, **characterized in that** the plain old telephony service is supplied over said local loop,
and in that said first impedance and said second impedance are an impedance load of a communication terminal at said customer premises
25   being on-hook and off-hook respectively, or vice-versa.

3. A method according to claim 1, **characterized in that** said first reflectometry measurements and said second reflectometry measurements are time domain reflectometry measurements.
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4. A method according to claim 1, **characterized in that** said first reflectometry measurements and said second reflectometry measurements are frequency domain reflectometry measurements,

and in that said method further comprises the step of converting back to the time domain said first reflectometry measurements and said second reflectometry measurements, thereby providing said first reflectogram and said second reflectogram.

5. A method according to claim 3, **characterized in that** said method further comprises the steps of:

- delineating an incident wave and a reflected wave from said first reflectometry measurements,
- computing from said first reflectometry measurements a time domain reflectogram of a reference signal, thereby providing said first reflectogram,
- delineating an incident wave and a reflected wave from said second reflectometry measurements,
- computing from said second reflectometry measurements a time domain reflectogram of a reference signal, thereby providing said second reflectogram.

6. An apparatus to qualify a local loop (LP), which connects customer premises (CP) to a central office of a telecommunication network (CO), and which comprises at least three loop terminations (TERM 1, TERM 2, TERM 3), said apparatus comprising a reflectometry unit (TDR) coupled to said local loop and adapted to carry out at a first loop termination (TERM 1) out of said at least three loop terminations a first reflectometry measurement while a second loop termination out of said at least three loop terminations, which is wired to said customer premises, is loaded with a first impedance (ZL = Z1), thereby providing a first reflectogram, which is used for qualifying said local loop,

characterized in that said reflectometry unit is further adapted to carry out at said first loop termination a second reflectometry measurement while said second loop termination is loaded with a second impedance distinct from said first impedance (ZL = Z2), thereby providing a second
5   reflectogram,

and in that said apparatus further comprises processing means (PROC) coupled to said reflectometry unit and adapted to determine in the time domain a feature which distinguishes said first reflectogram from said second reflectogram, and to identify from said feature said second loop
10   termination out of said at least three loop terminations (CP = TERM 2).

7. An apparatus according to claim 6, **characterized in that** said reflectometry unit is a time domain reflectometry unit adapted to carry out time domain reflectometry measurements.
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8. An apparatus according to claim 6, **characterized in that** said reflectometry unit is a frequency domain reflectometry unit adapted to carry out frequency domain reflectometry measurements,

and in that said processing unit is further adapted to convert said first
20   reflectometry measurements and said second reflectometry measurements back to the time domain, thereby providing said first reflectogram and said second reflectogram.

9. An apparatus according to claim 7, **characterized in that**
25   said time domain reflectometry unit is further adapted to delineate an incident and a reflected wave from said first reflectometry measurements,

in that said processing unit is further adapted to compute from said first reflectometry measurements a time domain reflectogram of a reference signal, thereby providing said first reflectogram,

in that said time domain reflectometry unit is further adapted to delineate an incident and a reflected wave from said second reflectometry measurements,

and **in that** said processing unit is further adapted to compute from said
5 second reflectometry measurements a time domain reflectogram of a reference signal, thereby providing said second reflectogram.

10.An apparatus according to any of the claims 6 to 9, **characterized in that** said processing means are remotely coupled to said
10 reflectometry unit via a data communication network.